



Guide to Input of Mapping Needs Into MNUSS

Background

In 1994, the Mapping Needs Assessment Process was established to identify and prioritize community map update needs in accordance with Section 575 of the *National Flood Insurance Reform Act* of 1994. Since May of 1997, more than 18,000 communities have been contacted for map update needs. Information regarding mapping needs are collected by FEMA in the Mapping Needs Update Support System (MNUSS) database. The following guidelines will assist State Coordinators, Cooperating Technical Partners (CTPs) and community officials in the assessment of mapping needs and data entry into MNUSS.

Overview of MNUSS

MNUSS is a Web-based database that is used to collect and compile mapping needs on a community basis. Information is entered into the database detailing map maintenance and flood data update needs for each community.

FEMA Headquarters and Regional Engineers use the information in MNUSS to help prioritize study/restudy projects for funding allocation. The data comprising MNUSS represent a great deal of coordination with communities, States, and Regional Offices to gather mapping needs information. This process is dynamic, and mapping needs can be identified and entered at any time.

Gathering Information

Before entering needs into MNUSS, the [MNUSS Data Worksheet](#) should be completed. This will allow for efficient and comprehensive data entry into MNUSS. The following information will guide you through completing the worksheet.

First, collect the following materials:

- Community Flood Insurance Rate Maps (FIRMs)
- Engineer's scale (ruler)
- Map wheel (if available)
- Calculator

Second, complete the "Origin" section of the MNUSS Data Worksheet. The origin information should include all contact information for the representative providing information regarding the National Flood Insurance Program (NFIP) mapping needs for the community, organization, or agency.

Determining Map Maintenance Needs

Features on the FIRM (such as roads and road names, railroads, streams, and corporate limits) help map users locate properties relative to the Special Flood Hazard Areas (SFHAs). Thus, it is crucial that these features be accurate and current. Updates to these items are considered "Map Maintenance Needs." To determine whether the community's FIRM requires a map maintenance update, examine the physical features on the FIRM and consider the following questions:

- Have new roads been built, or are there inaccuracies of road locations in or near the SFHA?
- Are the Elevation Reference Marks (ERMs) shown on the FIRM accurate? Have any been destroyed, or do any need to be added?
- Does the information on contiguous map panels match when aligned?
- Have Letters of Map Change (LOMCs) been issued for the community since the effective Flood Insurance Study (FIS) was produced, including Letters of Map Amendment (LOMAs) and Letters of Map Revision (LOMRs)?
- Would the community benefit from having its FIRMs converted to a countywide format?

- Have the corporate boundaries changed, or have there been annexations since the effective FIRM was produced?

Be sure to document the map panel numbers of the affected panels and note any descriptive information.

Determining Flood Data Update Needs

As development takes place and floodplain characteristics change, flood maps need to be updated to ensure communities have a useful tool for floodplain management and that flood insurance policies are rated properly. When determining flood data update needs, consider each flooding source or study reach length (stream section under consideration) separately, and complete the Flood Data Update section on the MNUSS Data Worksheet for each.

Study Category refers to the type of flooding source in question. For rivers, streams, and lakes (except the Great Lakes), choose *riverine*. For oceans, the Great Lakes, or areas affected by tide or wave action, choose *coastal*. For areas with an alluvial fan, choose *alluvial* flooding.

Flooding Source

The flooding source is the name of the water body that requires a map update (e.g., Susquehanna River, Atlantic Ocean, San Francisco Bay). If the flooding source has no name, refer to it as "Unnamed tributary to...". For each Flood Data Update need, identify "Beginning" and "Ending" points using physical landmarks on the FIRM to identify the upstream and downstream most limits under consideration. For example, "Beginning point: Approximately 400 feet west of the intersection of Maple Street and Locust Lane", and "Ending point: State Route 50 bridge crossing." This aids in the identification of the reach of the flooding source under consideration. In addition, the 'Notes' field in MNUSS may be used to provide further description of the need. Remember: one flooding source per need.

Need Type

Each community's FIS is based on hydrologic and hydraulic conditions. Analyses of these conditions are used to determine floodplain width and base flood elevations. Different factors may cause changes in these conditions; therefore, there are several types of flood data update needs. More than one type of flood data update need may exist for a specific flooding source/reach; therefore, please indicate all that apply. The following are brief descriptions and examples of each flood data update type:

Changes to hydrologic conditions

Hydrologic conditions determine the quantity of runoff generated by a given rainfall event. This can be affected by various factors, such as the vegetation and land cover in the watershed, the infiltration of the soils, the slope of the land, the amount of impervious land, and the size of the watershed. Some of the factors that may indicate a change in hydrologic condition include:

- Significant changes in land-use in the watershed
- New hydrologic data
- New flood control structures or changes to the operation of existing flood controls
- Comparison of recent flooding event with the effective FIS and FIRM

Changes to hydraulic conditions

Some factors to consider when determining whether there have been any changes to hydraulic conditions include:

- New bridges, culverts and/or road crossings
- Changes in stream morphology (the stream's erosion and deposition which naturally changes its' course and characteristics)
- Development near Zone A areas

Changes to floodplain width

If floodplain boundaries do not seem to be accurately depicted, then the flood maps would likely warrant updating. Usually, this can be determined after a 1% annual chance (100-year) flood event.

Changes to Base Flood Elevations (BFEs)

If BFEs do not accurately reflect the 1% annual chance flood event, then an update of this type would be needed.

Changes to coastal elevations

If coastal BFEs have changed or are inaccurate, the maps should be revised.

Average Change in BFE is an estimate of how much the BFEs on the FIRMs will change if the flooding source/reach is restudied. Because of the difficulty in determining a specific value of change in BFE prior to a study, BFE ranges are used to indicate estimated change. If no data exists that could be used for the basis of this estimate, you may wish to base your estimate on personal knowledge and professional judgement. Often, community engineers or surveyors are the best source of this information.

In lieu of site-specific information, the following guidelines have been established to provide default range values based upon common criteria. Note that you must indicate whether the BFE is likely to increase (+) or decrease (-).

Criteria	Change of BFEs
Mapping from Zone A to Zone AE	decrease of > 5 feet
Addition of a culvert	increase or decrease 1 to 5 feet
Addition of a bridge	increase or decrease 0 to 1 foot
Channelization	increase 1 to 5 feet
Dams, detention ponds	increase or decrease > 5 feet
Revising detailed Zone AE	increase or decrease 0 to 1 or 1 to 5 feet
Great Lakes Open Coast Flood Levels	increase 1 to 5 feet
Unstudied stream to Zone AE	increase 1 to 5 feet

To determine the **length of the study reach**, identify the stream on the FIRM and measure the length of the stream segment that has a mapping need using an engineer's scale or map wheel. Record beginning (upstream) and ending (downstream) points using landmarks on the FIRM, as described previously.

For alluvial flooding, determine the **area of the alluvial fan** in square miles.

An **average width of floodplain** for each flooding source is determined using the FIRM panel(s) where the flooding source is depicted and an engineering scale. Riverine sources are measured across the 1% annual chance (100-year) floodplain on the FIRM. Take numerous measurements at various points along the length of stream segment under consideration and determine an average floodplain width. For coastal sources, the average width of the floodplain is calculated by measuring the width of the Zone V area on the FIRM, from the depicted coastline to the landward extent of the Zone V area, at several locations along the study reach under consideration.

When the assessment is completed, it is then entered into MNUSS (<http://www.mnuss.fema.gov>), where community needs nationwide are stored, assessed and prioritized for future Flood Insurance Study updates.